

***Castilleja cryptantha*** Penell & Jones  
obscure paintbrush  
Scrophulariaceae (Figwort Family)

**Status:** State Sensitive  
**Rank:** G2G3S2S3

**General Description:** Perennial with several clustered stems, unbranched, reaching up to 6 in. (15 cm) tall; often hidden among meadow forbs; corolla elongate and narrow, approximately ½ in. (12 to 16 mm), calyx lobes acute, leaves linear to lanceolate, alternate, entire or divided into one to several pairs of lateral lobes, bracts broader than the leaves, colorful green to purplish-brown and covered with sticky hairs; bearing several flowers in leafy terminal spikes, 4 stamens, stigma somewhat two-lobed; petals and sepals are mostly hidden within the bracts.

**Identification Tips:** *Castilleja cryptantha* is morphologically similar to *C. chrysantha* and *C. pulchella*, both of which have a corolla of about ¾ in. (17 to 22 mm) in length, a stigma exerted beyond the tip of the upper lip of the corolla, and calyx lobes which are broadly obtuse or rounded. *C. cryptantha* has a corolla of about ½ in. (12 to 16 mm) long, a stigma which is not exerted or only slightly exerted from the upper lip of the corolla, and acute calyx lobes. The use of a technical key is required for accurate identification.

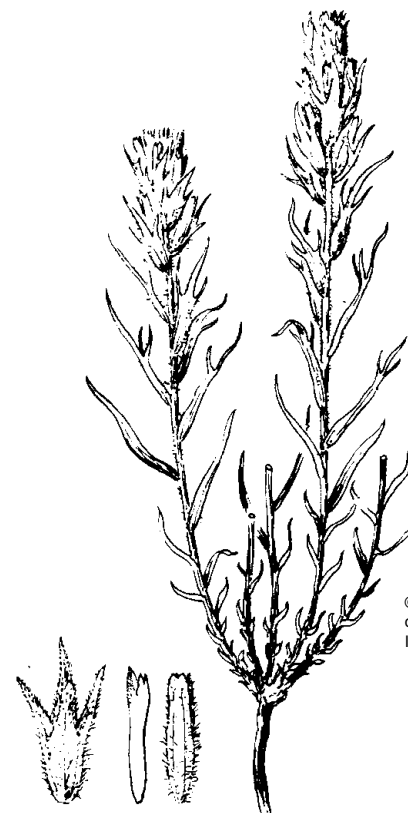
**Phenology:** *C. cryptantha* flowers in July and August.

**Range:** The species is endemic to Mount Rainier National Park.

**Habitat:** *Castilleja cryptantha* occurs in grassy sub-alpine meadows, parklands in the lower alpine zones, and occasionally around the edges of alpine tarns and basins on Mt. Rainier, often near stream channels and moist seeps. The microsites can be characterized as having generally level ground with a low, lush, herbaceous and shrubby cover. Soils appeared to be poorly developed and derived primarily from pumice and organic debris (Gamon, 1990). *C. cryptantha* occurs in sites which are relatively stable. Associated species include Indian paintbrush (*Castilleja parviflora* var. *oreopola* and *Castilleja rupicola*), sedge (*Carex nigricans* and *Carex spectabilis*), gentian (*Gentiana calycosa*), kinnikinnick (*Arctostaphylos uva-ursi*), wild sweet-william (*Phlox diffusa*), yarrow (*Achillea millefolium*), Drummond's anemone (*Anemone drummondiana*), aster (*Aster foliaceus*), pedicularis (*Pedicularis ornithorhynca* and *Pedicularis rainierenensis*) and potentilla (*Potentilla flabellifolia*).

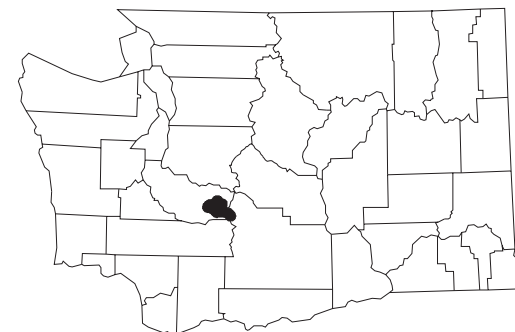
**Ecology:** In contrast to the usual condition of the genus, the stigma on *C. cryptantha* is not extended while in full blossom but remains hidden within the calyx. The floral structure and the high percentage of fruit capsules formed on caged plants indicate that the setting of the seed may occur by self-pollination (Pennell and Jones, 1937, and Duffield,

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Known distribution of  
*Castilleja cryptantha*  
in Washington



● Current (1980+)  
○ Historic (older than 1980)

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Photo by Terry Lillybridge



Photo by John Gamon

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1972). Fire may play a limited role in the maintenance of suitable habitat for *C. cryptantha*. The subalpine fir-Sitka valerian (*Abies lasiocarpa-Valeriana sitchensis*) community type, which is an important component in areas where the species is found, has one of the highest fire frequencies of any community type in Mount Rainier National Park (Hemstrom, 1982).

**State Status Comments:** *Castilleja cryptantha* is known only from Pierce County, Washington.

**Inventory Needs:** A thorough survey of Mount Rainier National Park and nearby non-park areas should be completed.

**Threats and Management Concerns:** Threats include trampling by hikers, elk, and goats.

**References:**

- Duffield, W.J. 1972. Pollination ecology of *Castilleja* in Mount Rainier National Park. Ohio Journal of Science. 72(2): 110-114.
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- Hemstrom, M.A. 1982. Fire in the forest of Mount Rainier National Park. Pages 121-125 in E.E. Starkey, J.F. Franklin, and Jean W. Mathews, eds., Ecological Research in the Pacific Northwest. Oregon State University, Forest Resources Lab, Corvallis, Oregon.
- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1959. *Vascular Plants of the Pacific Northwest Part 4: Ericaceae Through Campanulaceae*. University of Washington Press, Seattle, WA. 510 pp.
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